The prevalence of Charles Bonnet Syndrome in persons with low vision

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What is Charles Bonnet Syndrome?

- Complex visual hallucinations.
- First described by Charles Bonnet.
Aetiology

• **Release theory:**

  Visual pathway lesion
  Defective electrochemical impulses.
  Unwanted visual images.

• **Sensory deprivation theory:**

  Primary ocular pathology.
  ↓ in sensory input
  Abnormal electrochemical impulses
Prevalence

- 11 – 40% according to literature.
- High incidence of non-reporting.
- Patients afraid they will be labeled insane.
What do sufferers see?
(Mogk, 2000)
Characteristics

- Duration: seconds – hours
- Frequency: daily – few times per year
- Onset: months - years
Study design

- Epidemiological.

- **Aim**: to investigate the prevalence and characteristics of CBS in the aged low vision population.
Procedure

- 100 patients screened for CBS in 4 types of ophthalmic clinics.
  - 60 years +
  - Best VA of 6/12 or less.
Patients were asked if they ever saw things that were not really there.

- **NO**: basic demographic & vision information.
- **YES**: structured interview.
Results

- 100 patients screened.

- Prevalence = 16%

- 14 participants with hallucinations

- 20 participants without hallucinations (selected for comparison)
Demographics

- Participants with hallucinations (n=14)
  - Age range: 65-92 (78.3 SD=6.55)
  - Gender: female 12 (85%) male 2 (15%)

- Participants without hallucinations (n=20)
  - Age range: 61-90 (76.1 SD=7.75)
  - Gender: female 16 (80%) male 4 (20%)
Hearing Loss

Statistical difference between the 2 groups with regards to hearing loss.

CBS sufferers more likely to suffer with hearing loss.

$\chi^2 = 0.74$
Hallucinating group: correlation between living situation & onset of the hallucinations.

\( (\tau = 0.600, \ p = 0.018) \)
Education

- All participants completed primary education.

- Secondary education:
  - Participants with hallucinations = 21%
  - Participants without hallucinations = 20%

Correlation between EDUCATION and
- Onset of hallucinations ($\tau = 0.680$, $p = 0.012$)
- Duration of hallucinations ($\tau = 0.680$, $p = 0.007$)
Visual Acuity

Best corrected VA for both groups:
6/12 – 6/750

Mean:
Hallucinating group = 6/48
Non-hallucinating group = 6/24

- No statistical difference between the groups
Ocular diagnosis

- AMD
- Diabetic Retinopathy
- Glaucoma
- Myopic Degeneration
- Cataract
- Uveitis
- Diabetic Maculopathy

The graph indicates a significant prevalence of AMD compared to other conditions.
Onset of the hallucinations

- 1-3 months: 21.4%
- 4-6 months: 14.3%
- 7-9 months: 14.3%
- 10-12 months: 7.1%
- >12 months: 42.9%
Frequency of the hallucinations

- Daily 42.8%
- Few times a week 7.1%
- Weekly 14.3%
- Every 3 months 7.1%
- Few isolated episodes 7.1%
- One off episode 21.4%

Correlation between FREQUENCY and DATE OF ONSET
(r = 0.606, p = 0.016)
Duration of the hallucinations

- Minutes: 79%
- Seconds: 7%
- Hours: 14%
- Total: 100%
What do CBS sufferers see?

- Colourful patterns: 5
- Plants or Trees: 4.5
- Animals: 3.5
- Black patterns: 3
- Buildings: 2.5
- People: 2
- Boats or cars: 1.5
- Print or Writing: 1
- 0
Reporting

- No one: 22%
- Family member: 64%
- Ophthal/Optom: 14%
Reported Stress Levels

- No stress: 43%
- Some stress: 57%
Profile of a CBS sufferer?

- Female
- Approx. 78 years old
  - AMD
  - Living alone
  - Hearing loss
- Primary school education
- Suffering for >12 months
- Hallucination lasts for several minutes
- Experiencing some stress
- Not reported to doctor
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